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PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
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(54) Title: **FAIMS APPARATUS AND MEHTOD FOR SEPARATING IONS**

(57) Abstract: A method of controlling an asymmetric waveform that is generated as a combination of a plurality of sinusoidal waves, including two sinusoidal waves having a frequency that differs by a factor of two. The method includes the steps of sampling the generated asymmetric waveform to obtain a set of data points that is indicative of the generated asymmetric waveform. Each data point of the set of data points normalized. The method further includes the steps of determining at least a value relating to the normalized data points, of comparing the determined at least a value to template data relating to an ideal asymmetric waveform, and of effecting a change to the generated asymmetric waveform in dependence upon the comparison.

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